

ABSTRACT OF THE DISCLOSURE

In the preferred embodiment, the transmission length of the non-full rate frame is shortened frame in order for the mobile terminal 100 to monitor other frequencies with a single receiver.

5 Modulated symbols of non-full rate frame are transmitted with reduced repetition maintaining the sum of repeated symbol energy. Generally, for  $1/n$  ( $n=2,4,8$ ) length transmission,  $1/m$  ( $m \geq n$ ) rate frame repeated  $m/n$  times and transmitted with  $n/m$  symbol energy of the full rate frame. The system may use rate limitation to

10 generate a non-full rate frame. A position of the transmitted symbols may be randomized by a mobile specific predetermined random code to minimize interference between terminals different from each other. For intensive frequency scanning and synchronization signal transmission, non-transmitting period can be assigned for

15 successive frames of some interval. For  $1/n$  ( $n=2,4,8$ ) length successive transmission, the starting position of the transmitted symbols are staggered by  $1/n$  frame time in each frame. If there is no part of the frame to be staggered, the starting position is the beginning of the frame. Such implementation minimizes guard time

20 overhead for frequency switching and resynchronization.